

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)
2. (Currently Amended) An apparatus for driving a light emitting element in response to input data, the light emitting element caused to emit light by flowing a direct current, the apparatus comprising:
 - a voltage source; and
 - a switching section disposed between the voltage source and the light emitting element and controlled on a basis of the input data,

wherein, (1) when the switching section connects the voltage source to the light emitting element, a resistance value from an output end of the voltage source to a drive end of the light emitting element is smaller than an internal resistance value of the internal resistor of the light emitting element, and

(2) the voltage source has a negative feedback loop that negatively feeds back an output and amplifies a predetermined input voltage;

(3) the voltage source has a buffer amplifier and a capacitance section at an output of the buffer amplifier; and

(4) the capacitance section of the voltage source has greater capacitance than the capacitance value of parasitic capacitance of the light emitting element, when being observed from the switching section.
- 3-4. (Cancelled)
5. (Previously Presented) The apparatus according to claim 2, further comprising an input side retaining section for retaining control voltage when controlling optical power at an input side of a buffer amplifier of the voltage source.

6-7. (Cancelled)

8. (Previously Presented) An apparatus for driving a laser element as a light emitting element in response to input data, the apparatus comprising:

a first voltage source for causing the laser element to be a forward biasing state and generating a first voltage that is lower than a threshold voltage of laser oscillation;

a second voltage source for causing the laser element to be a forward biasing state and generating a second voltage that is larger than the threshold voltage of laser oscillation; and

a switching section for changing between the first voltage source and the second voltage source on a basis of the input data and applying the changed voltage directly to a drive end of the laser element,

wherein, (1) when the switching section connects the second voltage source to the laser element, a resistance value from an output end of the second voltage source to the drive end of the laser element is smaller than the internal resistance value of the internal resistor of the laser element,

(2) the laser element is a surface emitting laser element,

(3) the surface emitting laser element includes a plurality of light emitting parts emitting a plurality of laser beams, and

(4) the first voltage is commonly applied to at least two of the light emitting parts.

9. (Previously Presented) An apparatus for driving a laser element as a light emitting element in response to input data, the apparatus comprising:

a first voltage source for causing the laser element to be a forward biasing state and generating a first voltage that is lower than a threshold voltage of laser oscillation;

a second voltage source for causing the laser element to be a forward biasing state and generating a second voltage that is larger than the threshold voltage of laser oscillation; and

a switching section for changing between the first voltage source and the second voltage source on a basis of the input data and applying the changed voltage directly to a drive end of the laser element,

wherein, (1) when the switching section connects the second voltage source to the laser element, a resistance value from an output end of the second voltage source to the drive end of the laser element is smaller than the internal resistance value of the internal resistor of the laser element,

(2) at least latter of the first and second voltage sources has:

a negative feedback amplifying circuit having a buffer amplifier for amplifying an input voltage, the circuit for feeding back an output signal of the buffer amplifier to lower impedance of output of the buffer amplifier; and

a capacitance section which has a larger capacitance value than the capacitance of parasitic capacitance of the laser element when being observed from the switching section and is connected to an output side of the buffer amplifier, and

(3) a resistance value from the output of the buffer amplifier to the laser element is smaller than a differential resistance value of the laser element when the laser emits light.

10. (Original) The apparatus according to claim 9, further comprising an input side retaining section for retaining control voltage when controlling optical power at an input side of the buffer amplifier.

11. (Original) The apparatus according to claim 10, further comprising a current supplying section for supplying a compensation current, which compensates a fluctuation of

an output current of the negative feedback amplifying circuit due to changing of the switching section, to the drive end of the laser element.

12. (Original) The apparatus according to claim 11, wherein the current supplying section includes a current source and a second switching section for connecting the current source to the drive end of the laser element when the switching section changes to the second voltage source and for separating the current source from the drive end of the laser element when the switching section changes to the first voltage source.

13. (Original) The apparatus according to claim 11,
wherein the current supplying section includes a current source having an
MOS transistor and an MOS switch connected between the current source and the drive end
of the laser element; and

wherein the MOS transistor of the current source and the MOS switch are
formed of a dual gate MOS transistor.

14-27. (Canceled)

28. (Currently Amended) An apparatus for driving a light emitting element in
response to input data, the light emitting element caused to emit light by flowing a direct
current, the apparatus comprising:

a voltage source;
a switching section disposed between the voltage source and the light emitting
element and controlled on a basis of the input data; and

a compensating section for detecting terminal voltage of the light emitting
element and compensating fluctuation in temperature of the light emitting element on a basis
of the detected terminal voltage of the light emitting element, element; and

an input side retaining section for retaining control voltage when controlling
optical power at an input side of a buffer amplifier of the voltage source, wherein

when the switching section connects the voltage source to the light emitting element, a resistance value from an output end of the voltage source to a drive end of the light emitting element is smaller than an internal resistance value of an internal resistor of the light emitting element.

29. (Canceled)

30. (Previously Presented) A system for driving light emitting elements, the system comprising:

a plurality of apparatus for driving the light emitting elements in response to input data, the light emitting elements caused to emit light by flowing a direct current, the apparatus comprising:

a voltage source; and

a switching section disposed between the voltage source and the light emitting element and controlled on a basis of the input data,

a detecting section for detecting optical power of the plurality of light emitting elements; and

a error amplifying section for comparing voltage corresponding to the detection result of the detecting section and a reference voltage to amplify the error therebetween;

wherein, when the switching section connects the voltage source to the light emitting element, a resistance value from an output end of the voltage source to a drive end of the light emitting element is smaller than an internal resistance value of the internal resistor of the light emitting element;

wherein the switching section changes between an output voltage of the voltage source and a biasing voltage, to bias the light emitting element on a basis of the input data; and

wherein each of the plurality of apparatus for driving light emitting elements drives the light emitting element on a basis of outputs of the error amplifying section.

31. (Original) The system according to claim 30,

wherein the error amplifying section includes:

an error amplifier inputted the detection result of the detecting section and the reference voltage; and

a plurality of negative feedback loops for negatively feeding back output of the error amplifier to inputs thereof, the negative feedback loops provided to corresponding number of the apparatuses for driving light emitting elements;

wherein each of the plurality of negative feedback loops includes:

a retaining section for retaining a voltage corresponding to the output voltage of the error amplifier when controlling the optical power of the light emitting elements; and

a switching section connected to the retaining section in series;

wherein each of the plurality of apparatus for driving light emitting elements has an input side retaining section for retaining the retaining voltage of the corresponding retaining section in the plurality of negative feedback loops; and

wherein each of the plurality of apparatus for driving light emitting elements drives the light emitting element on a basis of the retaining voltage of the input side retaining section.

32-33. (Canceled)